

#### ABSTRACT OF THE DISCLOSURE

There is constructed a constitution including an exhaust heat fired regenerator constituting a heat source by exhaust heat from external machine generating the exhaust heat, a heat fluid flow path for making a fluid having the exhaust heat constituting the heat source or a fluid recovering the exhaust heat flow to the exhaust heat fired regenerator, flow path open/close device provided at the heat fluid flow path for controlling to make the heat fluid flow to the exhaust heat fired regenerator 1 and cut off the fluid therefrom by opening and closing the exhaust fluid flow path, first regenerator temperature detector for detecting temperature of the exhaust heat fired regenerator, a directly fired regenerator constituting a heat source by combustion heat of a burner, second regenerator temperature detector for detecting temperature of the directly fired regenerator, heat medium temperature detector for detecting temperature of a heat medium cooled or heated by an evaporator and controller for controlling to operate the flow path open/close device and the burner, in which a combustion amount of the burner can be increased and reduced and the controller controls to open and close the flow path open/close device and increase and reduce the combustion amount of the burner in accordance with the temperature of the heat medium detected by the heat medium temperature detector and a higher one of temperature of the

temperature of the exhaust heat fired regenerator detected by the first regenerator temperature detector and the temperature of the directly fired regenerator detected by the second regenerator temperature detector.